NAEMSP

2026 ANNUAL MEETING

Specialty Workshops, Scientific Assembly & Trade Show

EMS Dispatch – Structure & Function

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Tampa, FL

JW Marriott Tampa Water Street

Disclosures and Affiliations

- **Disclosures and Affiliations**
  - **Western Michigan University Homer Stryker MD School of Medicine**
    - Professor and Chief, Division of EMS and Disaster Medicine
  - **Kalamazoo County Medical Control Authority**
    - EMS Medical Director
  - **Michigan Department of Health and Human Services**
    - State Medical Director, Division of EMS and Systems of Care
  - **Kalamazoo County Consolidated Dispatch Authority**
    - Board Member
  - **Yellowstone, Great Smokey Mountains, and Indiana Dunes National Parks**
    - Associate Medical Director

DISCLOSURE SLIDE

SPEAKER DISCLOSURE / COI STATEMENT

NAEMSP asks all individuals involved in the development and presentation of Continuing Medical Education (CME) activities to disclose all relationships with ineligible companies within the past 24 months. This information is disclosed to CME activity participants. NAEMSP has procedures in place to resolve any apparent conflicts of interest.

I, William Fales, have no commercial relationships to disclose.

Core Content of EMS Medicine

2 MEDICAL OVERSIGHT OF EMS

- **2.2 EMS Systems**
  - **2.2.1 Public Safety Answering Points**
    - 2.2.1.1 Pre-arrival instructions
    - 2.2.1.2 Dispatch
      - 2.2.1.2.1 Use of lights and sirens
      - 2.2.1.2.2 Prioritization of response
        - (e.g., determining local needs based on local resources)
      - 2.2.1.2.3 Tiered-response

American Board of Emergency Medicine

Medical Directors and Dispatch

- Dispatch isn't really my concern.
- It's not really clinical, so it's not a medical director thing.
- It involves a separate agency that I have no control over.
- Dispatch just sort of happens and there's nothing I can do to make it better.
- **Dispatch is the entry point to the EMS system.**
  - **If dispatch fails, the system fails!**

Authority vs. Leadership

EMS Dispatch Components

Public Safety Answering Point

- "PSAP" = "911 Center"
- Core Functions
  - Receives 911 call
  - Determines service need(s)
  - Performs EMD or transfers call to "Secondary PSAP"
- May dispatch EMS unit(s)

Emergency Medical Dispatch

- "EMD"
- Core Functions
  - Prioritizes Call
  - Dispatches EMS unit(s)
  - Pre-Arrival Instructions
- Performed at Primary or Secondary PSAP

PSAP **EMD**

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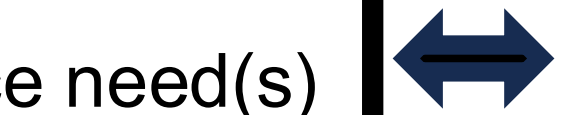

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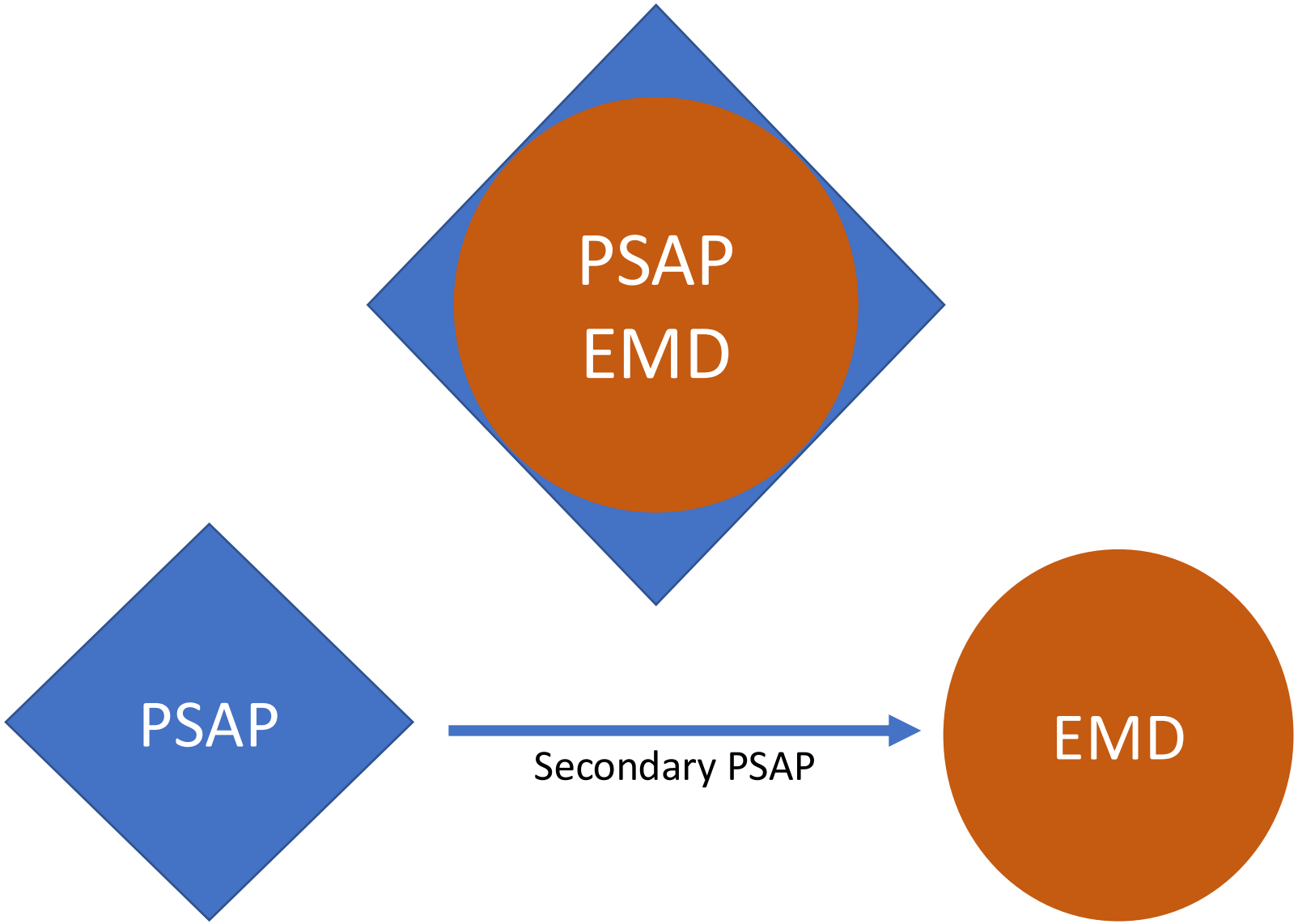
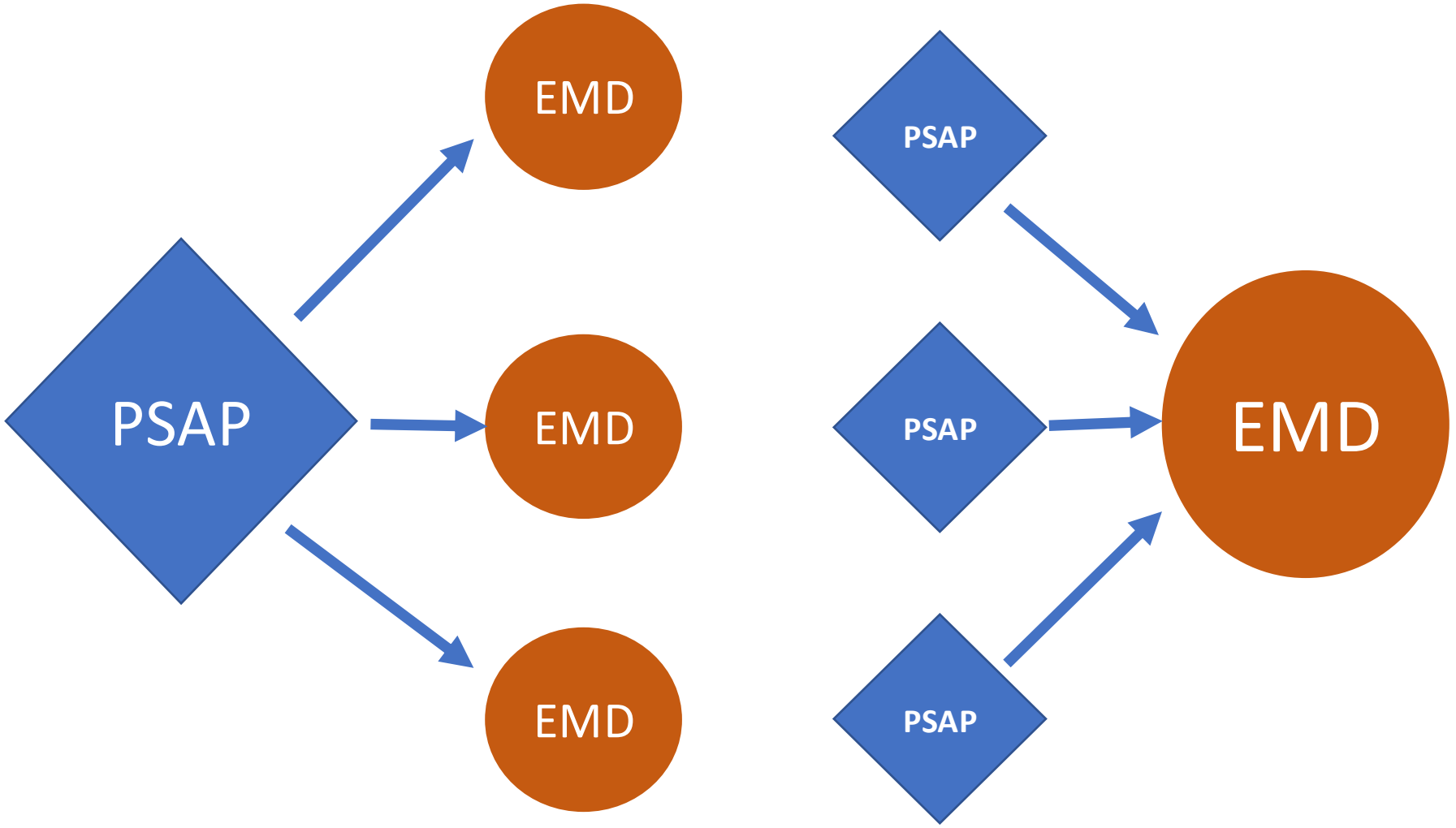
PSAP **EMD**

PSAP-EMD SIMPLICITY



PSAP-EMD COMPLEXITY



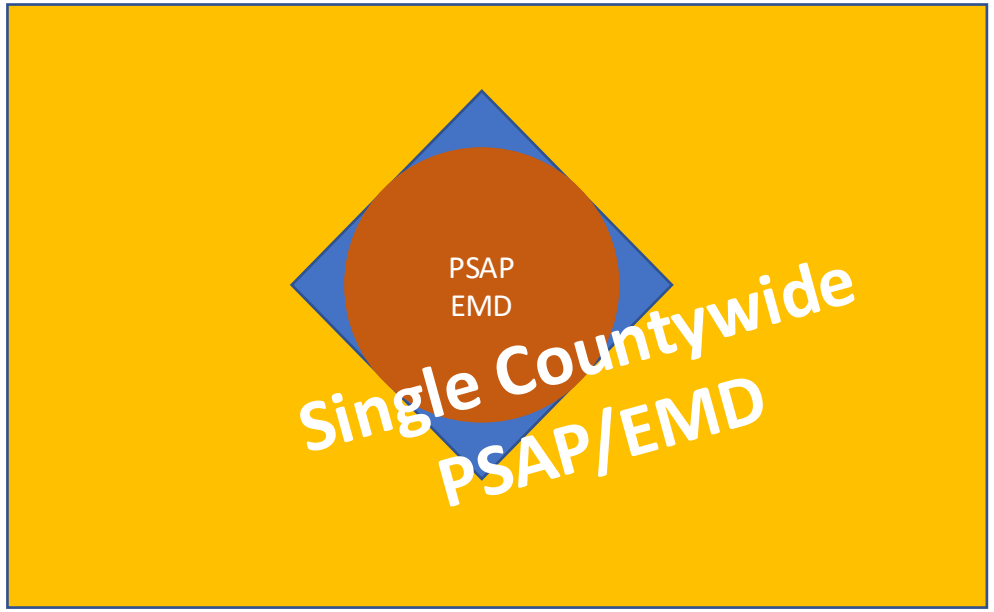
A Tail of Two Counties

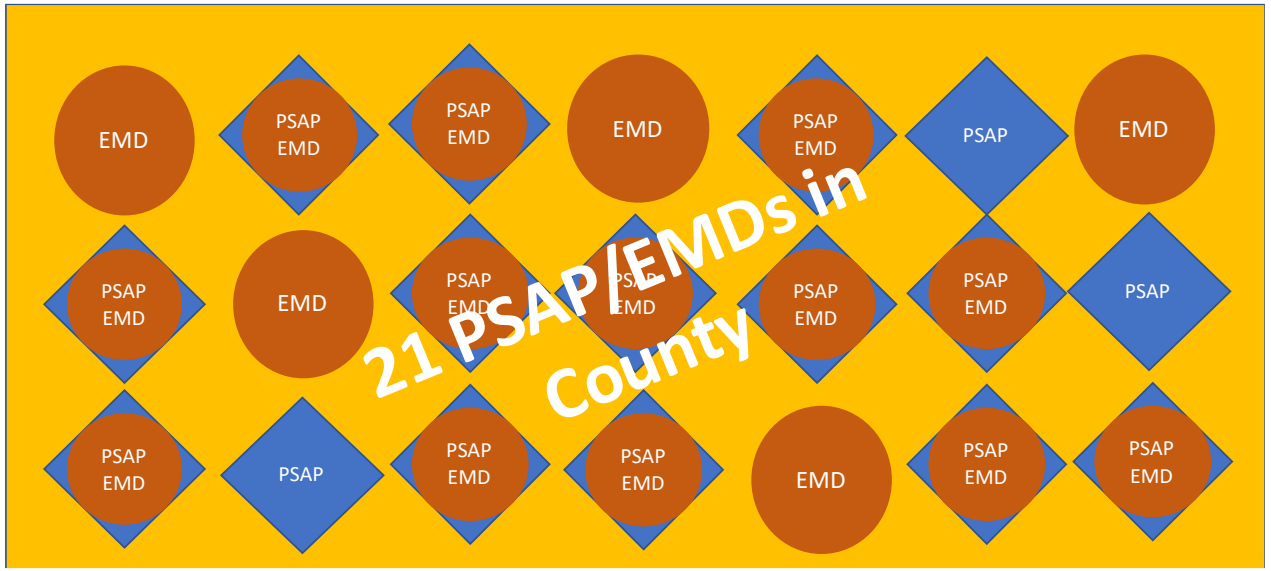
Allegheny County, PA

- Area: 745 sq mi
- Population: 1.25 million
- 47 EMS Agencies

Oakland County, MI

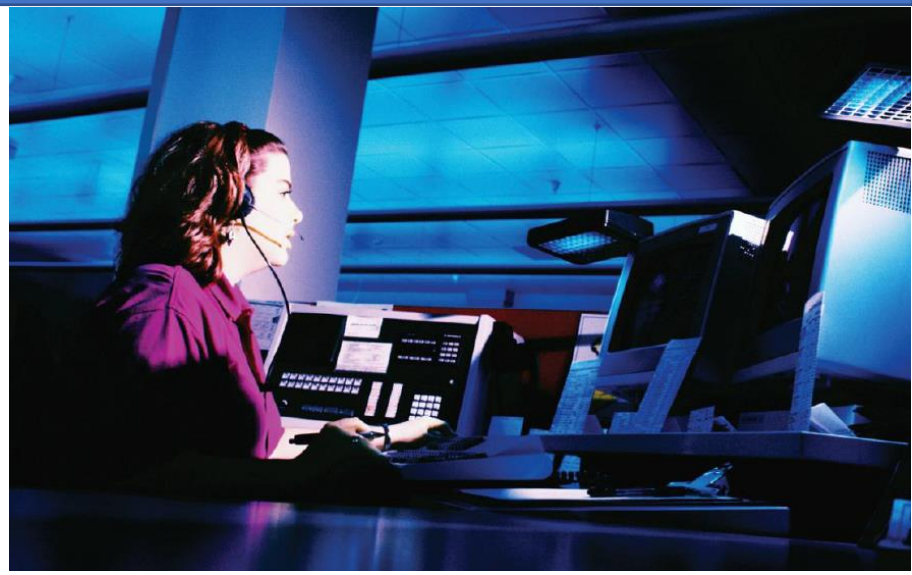
- Area: 978 sq mi
- Population: 1.27 million
- 48 EMS Agencies





Source: Federal Communications Commission. (2022, December). 911 Master PSAP Registry. Retrieved from https://www.fcc.gov/general/9-1-1-master-psap-registry

PSAP Operations

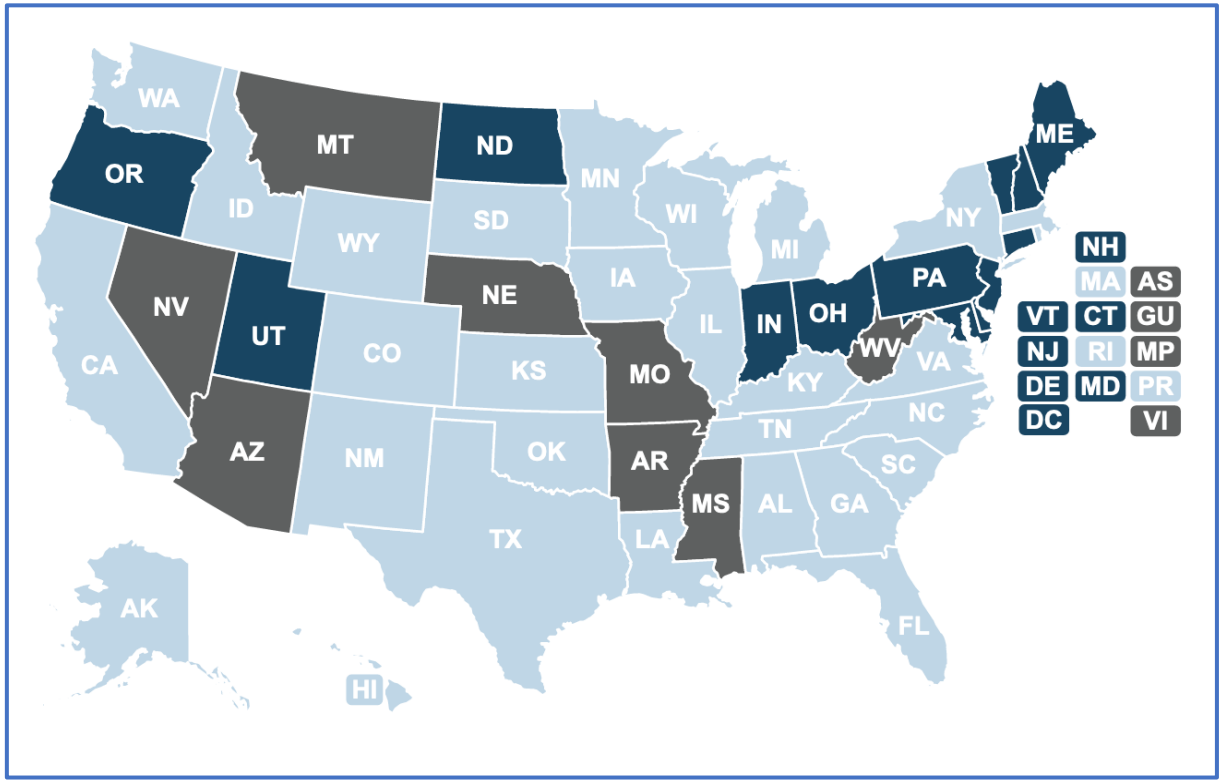


- >4,600 Primary PSAPs nationally
  - >240 million calls
- Call Taking
  - Via wireless, wired, MLTS, VoIP, text
- Automated Number Identification (**ANI**)
- Automated Location Identification (**ALI**)
- Provide EMD services (~54%)
  - *or* Transfer caller to “Secondary PSAP”
- Dispatch all or some EMS/Public Safety units

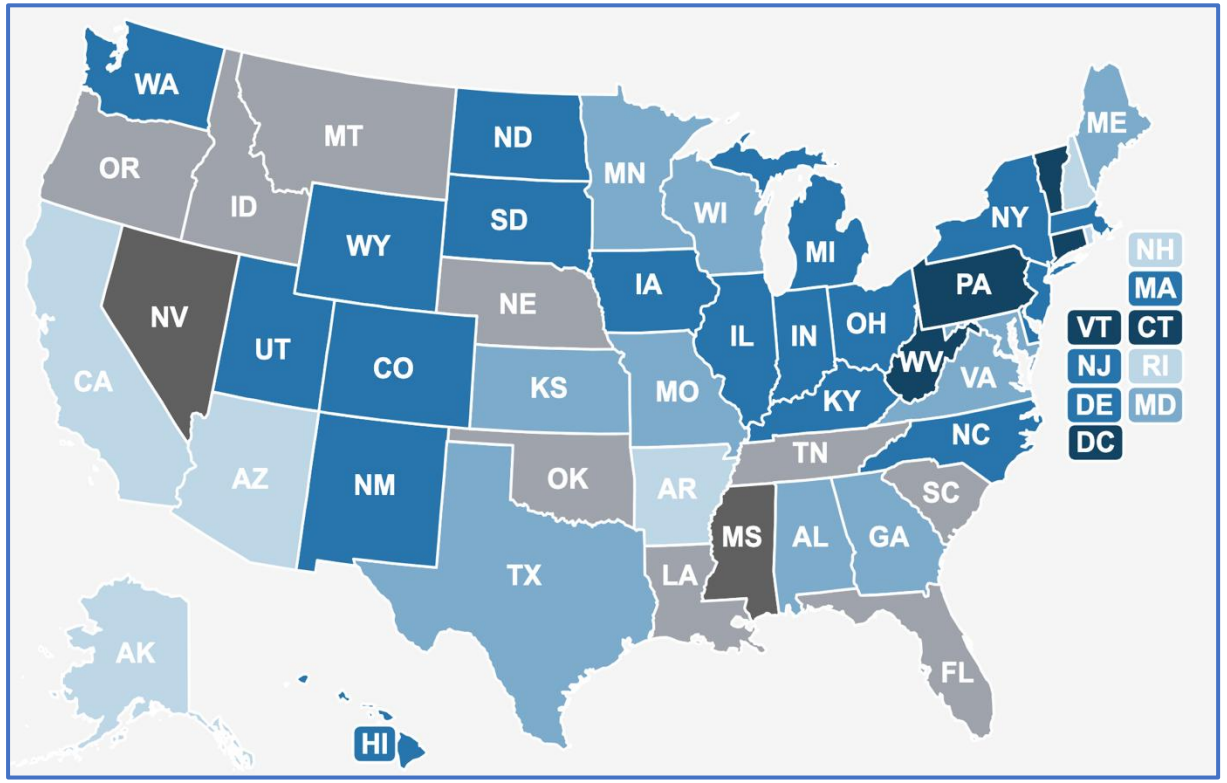
Source: NHTSA. (2022, February). 2022 National 911 Progress Report. Retrieved from https://www.911.gov/assets/2021-911-Profile-Database-Report_FINAL.pdf

Percent of PSAPs Providing EMD Services

2017

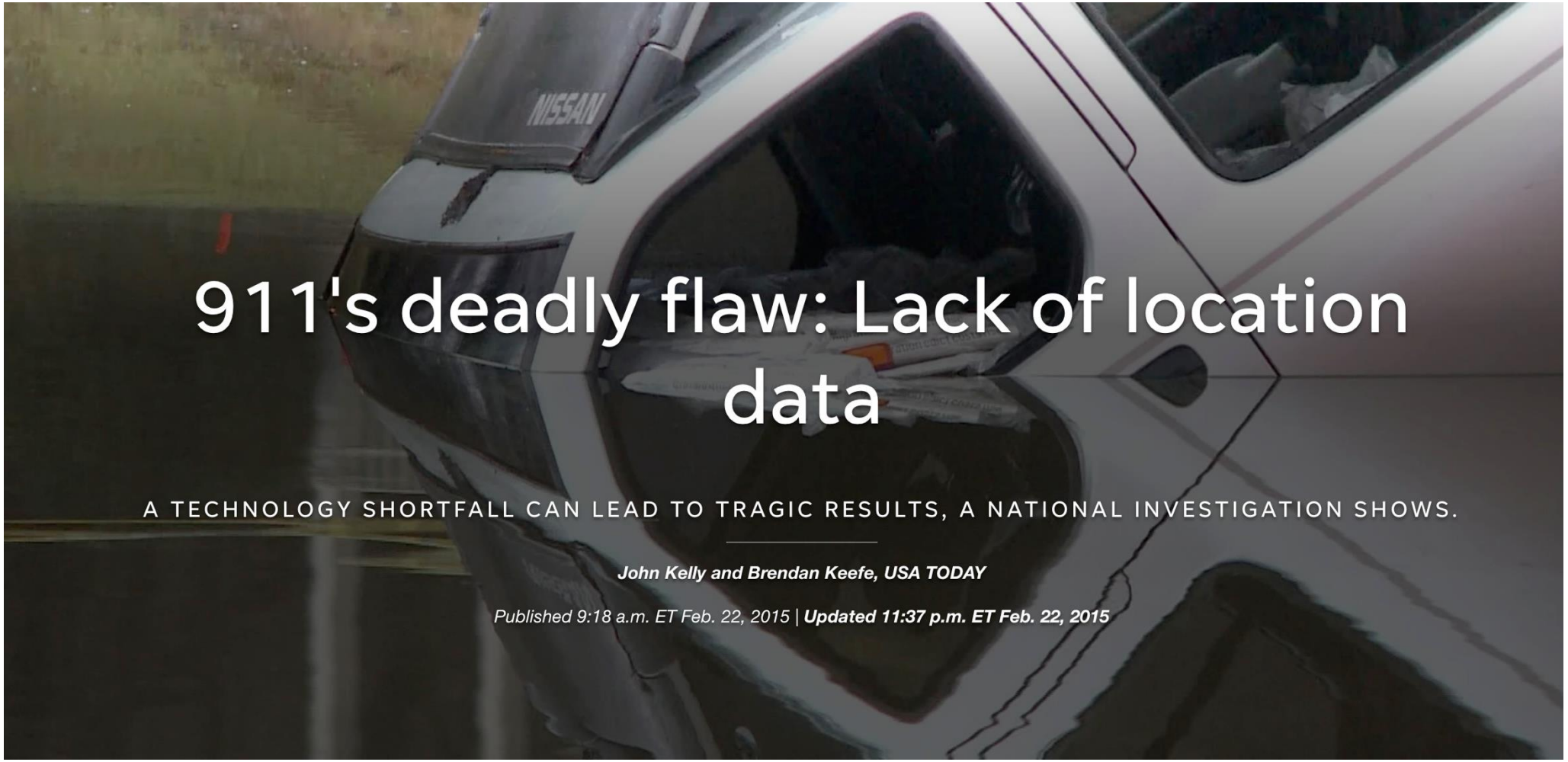


2022



0 - 24% | 25 - 49% | 50 - 99% | 100% | State reported unknown | State did not submit

Source: https://www.911.gov/issues/911-stats-and-data/



"An estimated 10,000 people each year would be saved with accurate location standards from indoor cellphone calls,"

Source: https://www.usatoday.com/story/news/2015/02/22/cellphone-911-lack-location-data/23570499/

“New” FCC Rules

Wireless 911 Location Accuracy Rules

2015 Performance Standards

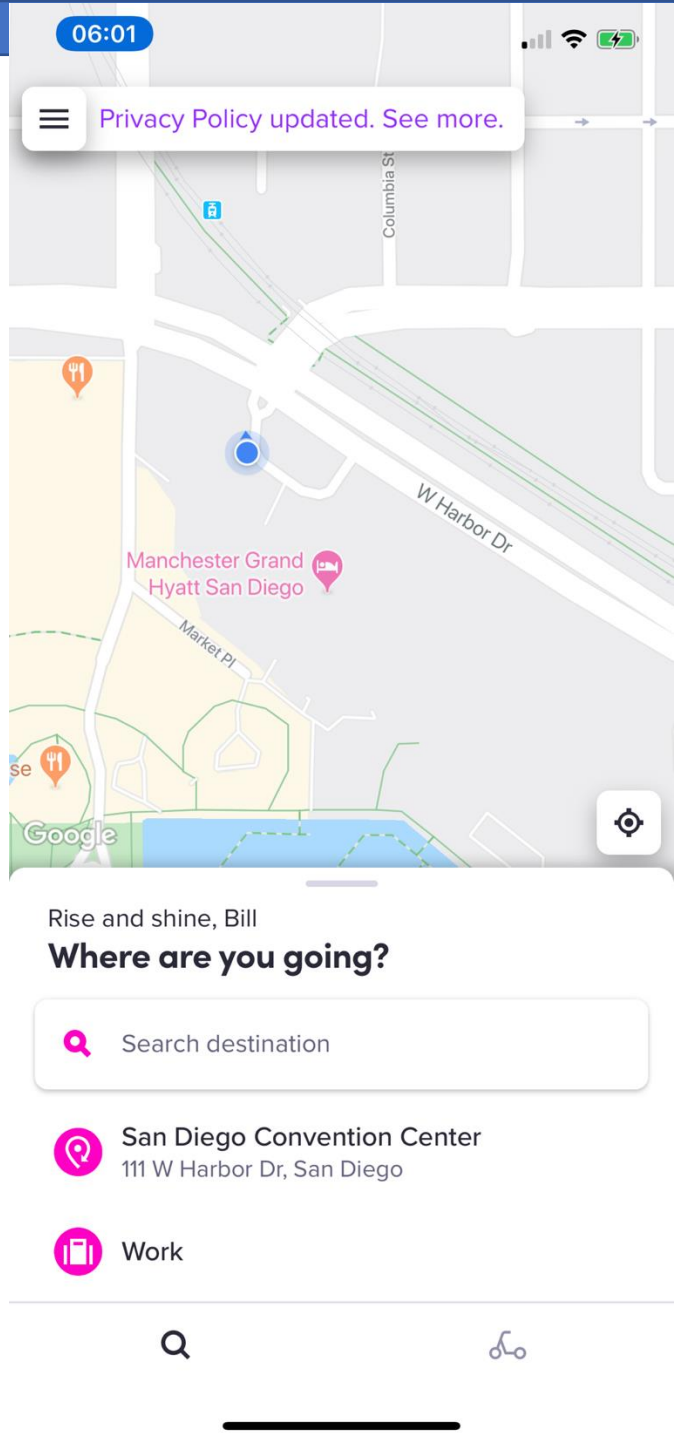
- 50m horizontal (x/y) accuracy
  - 2017 40% reliability >>>> 2021 80% reliability

2019 Performance Standards

- 3m vertical (z-) accuracy
  - 2021 80% reliability in top 25 CMAs
  - 2023 80% reliability in top 50 CMAs

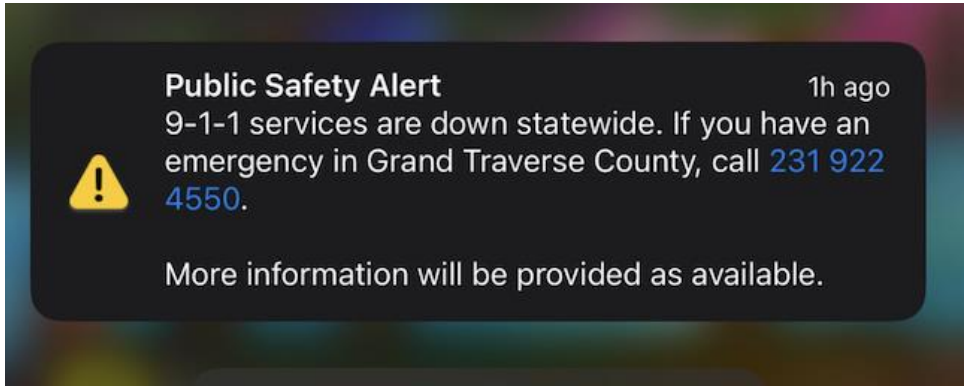
2025 Notice of Proposed FCC Rulemaking

- Proposes nationwide dispatchable location info
- Future uncertain



Next Generation 911 (NG911)

- Transition from analog to digital
- Exploit smart phone technology
  - Text messaging, photos, videos
- Emergency Services Internet Protocol (ESInet)
- Rollouts currently underway (but variable)
- Full implementation 2-4 years
  - Text to 911 now widely available but not universal



Emergence Medical Dispatch

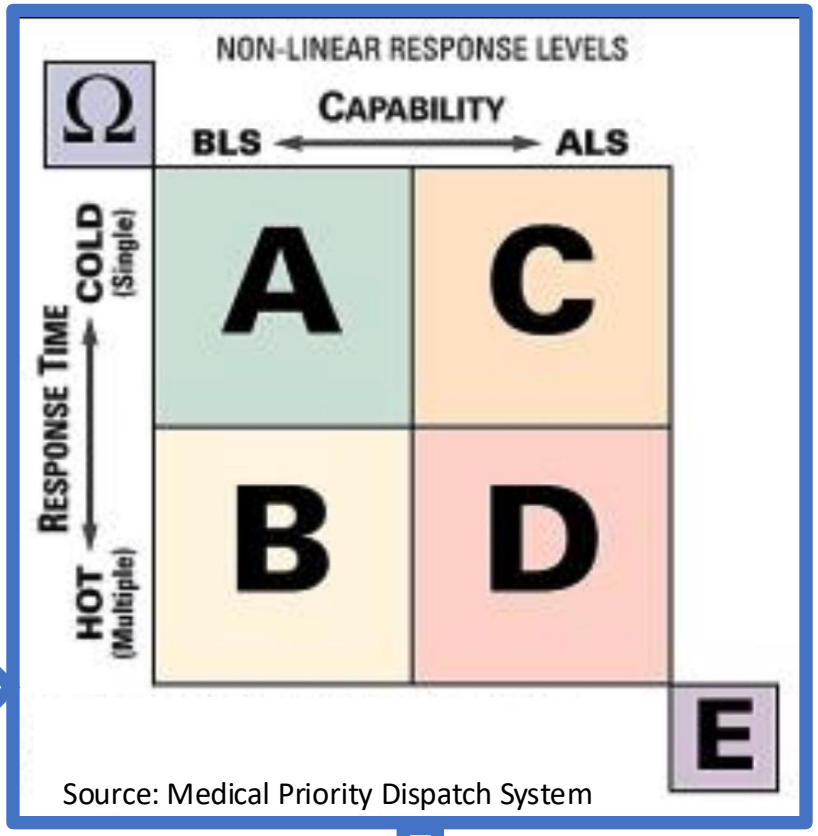
- *Call Prioritization*
- *Unit Dispatch*
- *Pre-Arrival Instructions*

Source: Life EMS Ambulance

Call Prioritization

- **Purpose**
  - Send "right **resource(s)** in right **mode** in right time"
    - Resource(s)
      - BLS vs ALS
      - 1st responders +/-
    - Mode of response
      - Hot vs Cold
- Structured, protocol-driven caller interrogation

Determinant



Source: Medical Priority Dispatch System

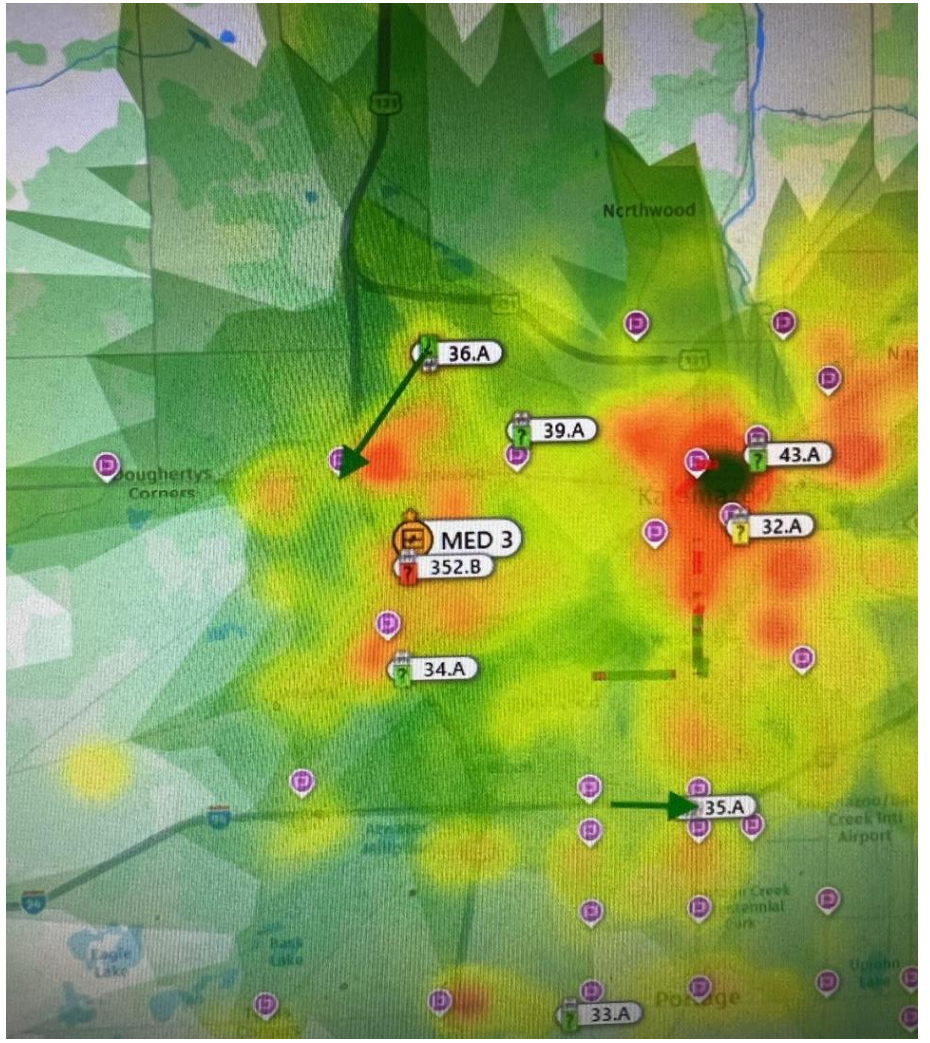
Local / System Protocols

Priority

- **Resource(s)**
- **Mode**

EMS Unit Dispatch

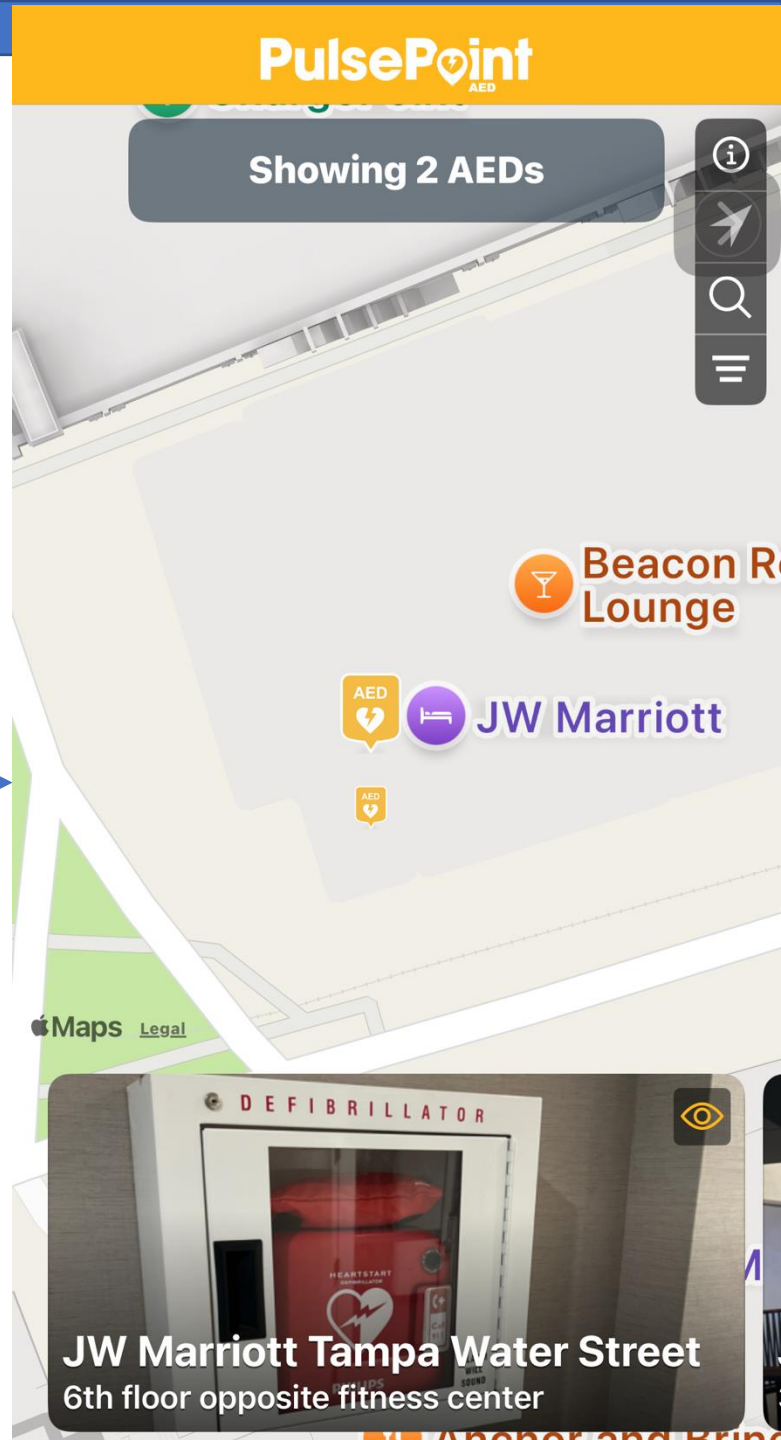
- **Confirm incident location**
  - Must re-confirm from PSAP
  - Secondary PSAP: Receives ANI/ALI
- **Computer-Assisted Dispatch (CAD)**
  - Tracks status/location of EMS units
  - Determines closest <u>appropriate</u> unit
  - Documents all EMD activities
    - Critical times (e.g., response, scene times)
    - Pushes data to patient care record
- **Alert responding unit(s)**



Source: Life EMS Ambulance

Pre-Arrival Instructions

- Provide “Dispatch Life Support”
  - “Zero response time”
- Scripted pre-arrival instructions
  - CPR/AED for **cardiac arrest**
    - Telephone CPR (T-CPR)
    - Public AED location?
  - Naloxone for **opioid OD**
  - Assist in **childbirth**
  - Aspirin for **chest pain**
- High public expectations
  - Increasing evidence showing safety and efficacy
  - Liability for <u>not</u> offering?

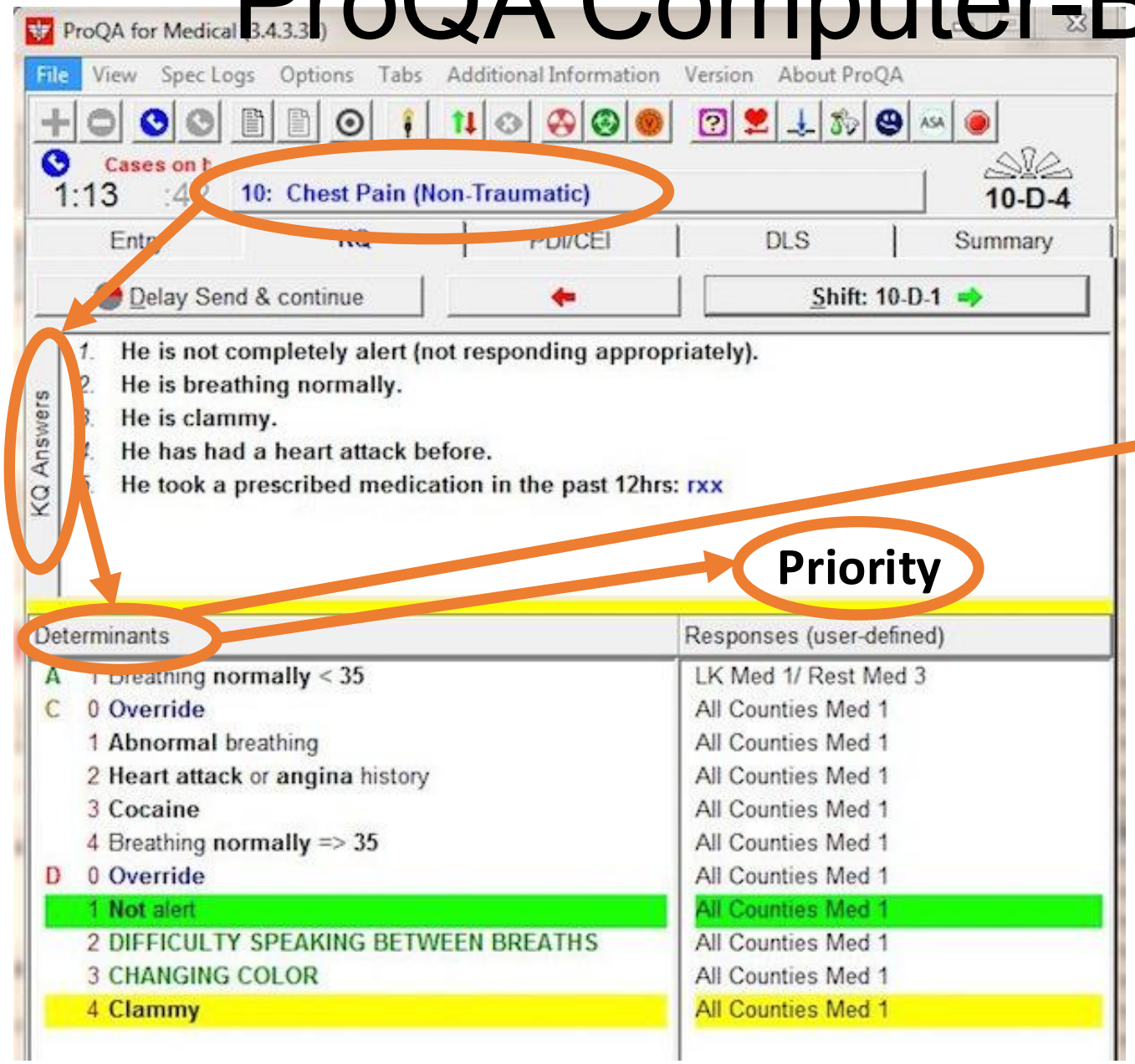


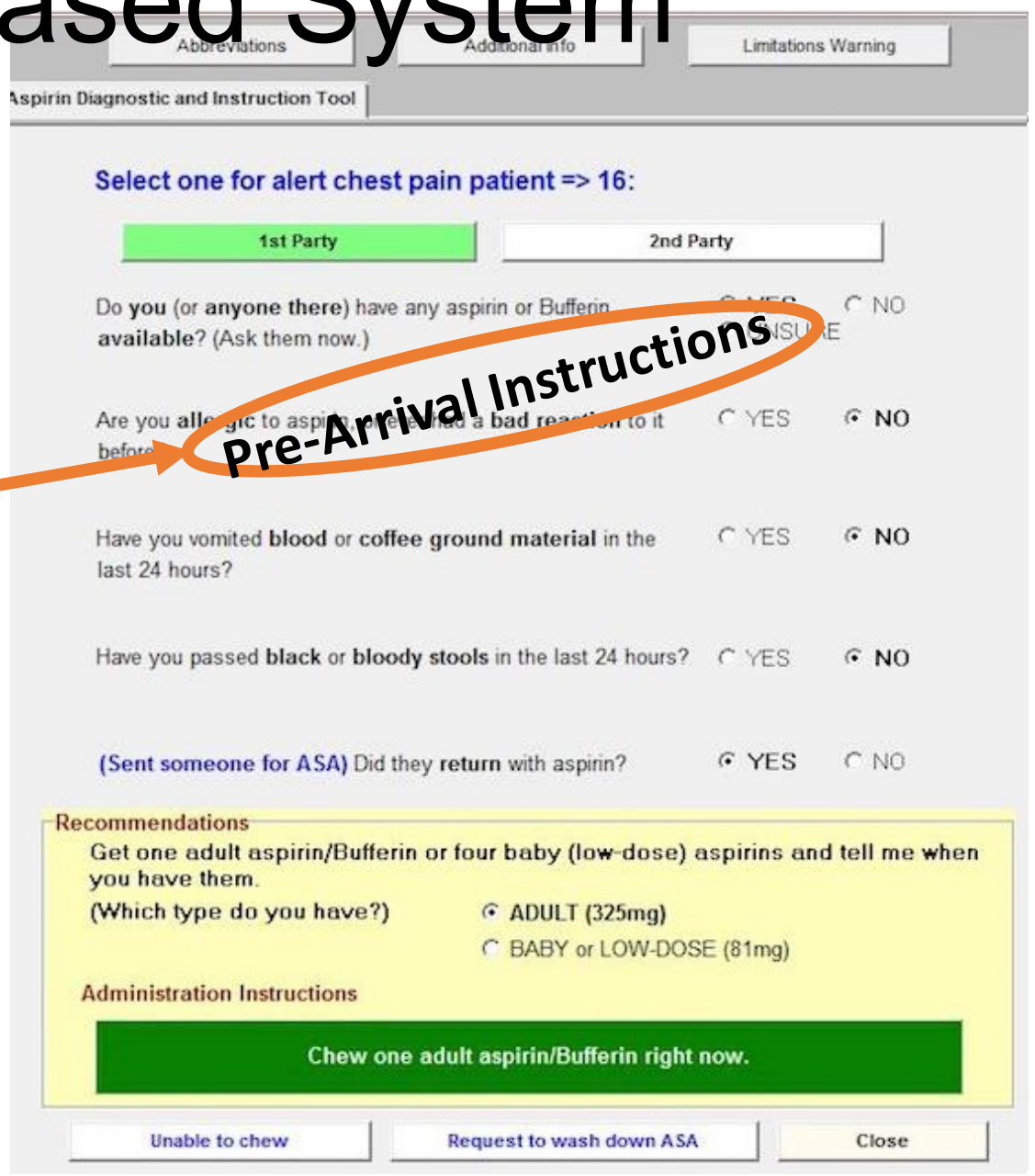
EMD Protocol Reference System

- **Initial Key Questions**
  - Universal caller interrogation
  - Goal: Identify Chief Complaint
- **Chief Complaint Categories**
  - 35 ***Chief Complaints***
  - Complaint-specific **key questions** leads to ***Determinants***
  - Determinants used for ***Call Prioritization***
- **Scripted Medical Protocol**
  - Provides clear, simple pre-arrival instructions
  - Medical director approval

Source: Life EMS Ambulance

ProQA Computer-Based System





Source: Life EMS Ambulance - ProQA/MPDS™

Potential Impact of AI and 911/EMD

- Real-time call analysis using speech recognition and natural language processing
- Faster / more accurate call prioritization
- Early detection of cardiac arrest
  - Decision support for T-CPR (T-CPR) initiation
- Identification of special situations
  - Potential need for prehospital blood
  - Possible unsafe scenes
- Improved consistency, quality assurance, and dispatcher performance metrics

Source: AI-generated image (OpenAI / DALL·E, 2025

Final Thoughts

- EMS Medical Directors should…
  - Champion high-quality EMS dispatch
  - Visit PSAPs and EMD centers (regularly)
  - Include dispatchers in debriefings
    - Don’t forget when giving positive feedback
    - Make 911/EMD feel like part of the team (they are)

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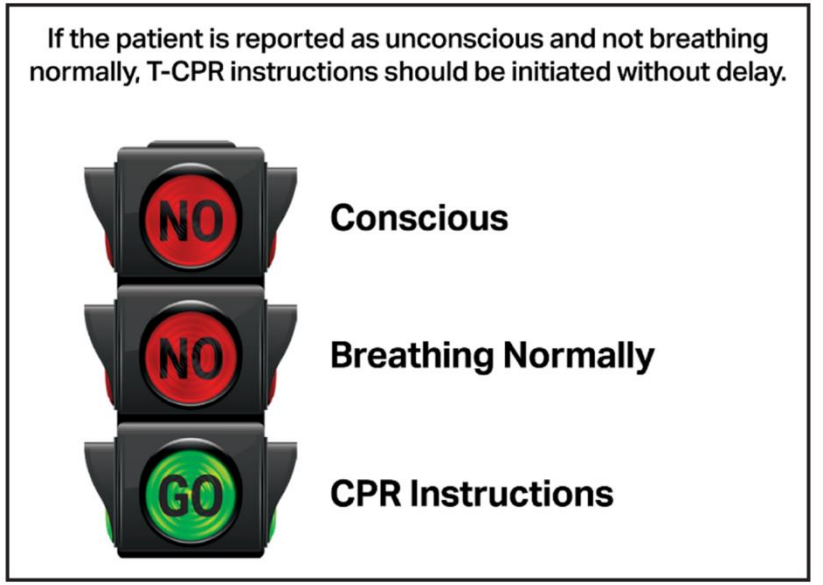
Supplemental Slides

2025 AHA Guidelines for CPR & Emergency Cardiovascular Care[1]

- EMD Centers should offer T-CPR to patients in OHCA
- If the patient is unresponsive with abnormal, agonal, or absent breathing, the telecommunicator should assume that the patient is in cardiac arrest.
- Telecommunicators should determine the location of the event before questioning to identify OHCA, to allow for simultaneous dispatching of EMS response.
- T-CPR instructions for adult OHCA should advise compression-only CPR consistent with adult BLS guidelines.

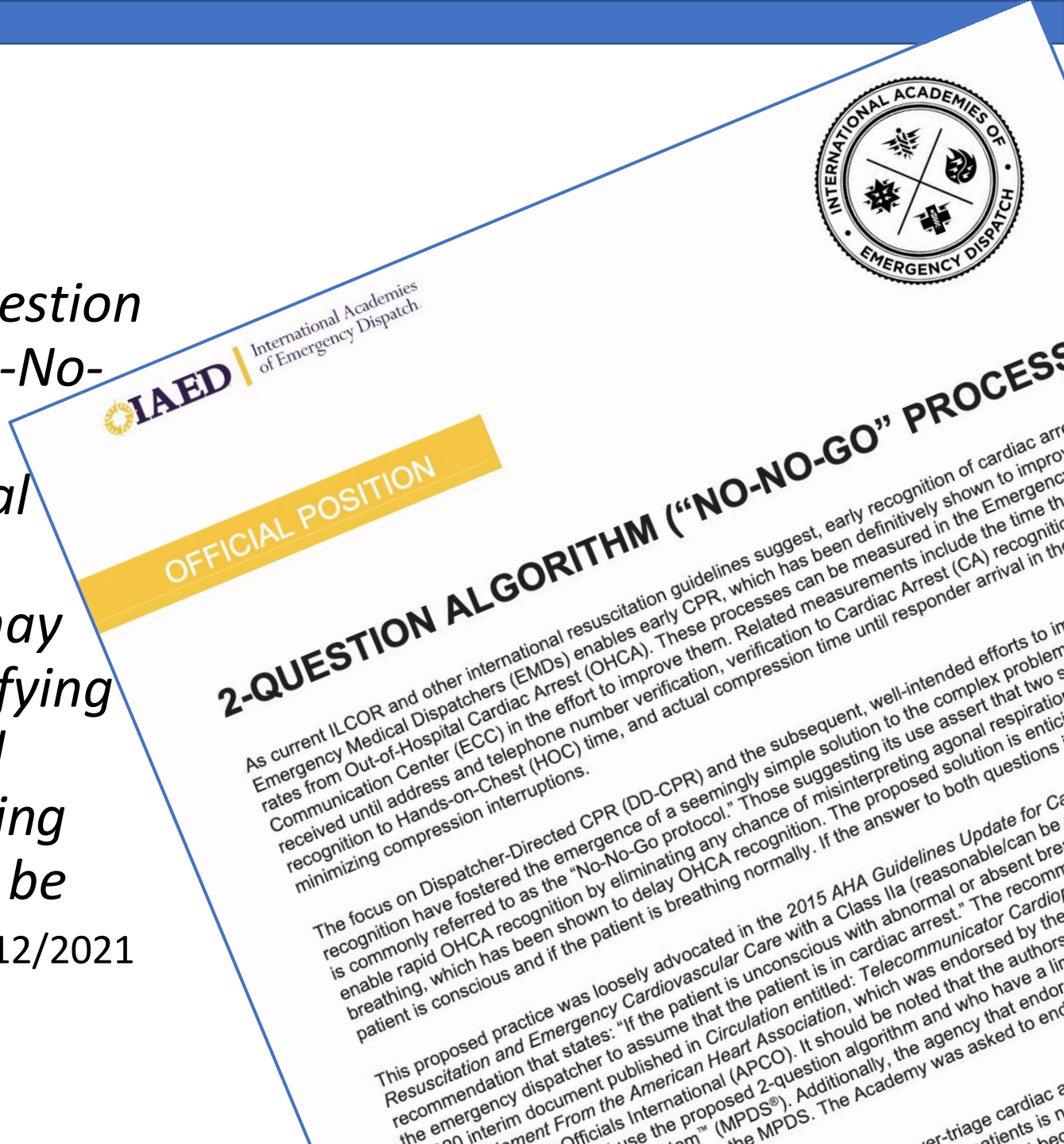


Source: 2025 AHA Guidelines[1]

[1] Dezfulian C, Cabañas JG, Buckley JR, Cash RE, Crowe RP, Drennan IR, Mahgoub M, Mannarino CN, May T, Salcido DD, Uzendu AI, Vogelsong MA, Worth JA, Girotra S. Part 4: systems of care: 2025 American Heart Association Guidelines for Cardiopulmonary Resuscita

Whoa on No-No-Go!

"…the IAED does not endorse the 2-question algorithm commonly known as the No-No-Go protocol, nor does it recommend, sanction, or support in any way its local adaptation into an existing MPDS implementation. While this protocol may suffice as the bare minimum for identifying OHCA in the absence of any structured protocol for telecommunicators receiving emergency medical calls, it should not be considered optimal…." 12/12/2021


IAED | International Academies of Emergency Dispatch

OFFICIAL POSITION

2-QUESTION ALGORITHM ("NO-NO-GO" PROCESS

As current ILCOR and other international resuscitation guidelines suggest, early recognition of cardiac arre
Emergency Medical Dispatchers (EMDs) enables early CPR, which has been definitively shown to improv
rates from Out-of-Hospital Cardiac Arrest (OHCA). These processes can be measured in the Emergenc
Communication Center (ECC) in the effort to improve them. Related measurements include the time th
received until address and telephone number verification, verification to Cardiac Arrest (CA) recognitio
recognition to Hands-on-Chest (HOC) time, and actual compression time until responder arrival in th
minimizing compression interruptions.

The focus on Dispatcher-Directed CPR (DD-CPR) and the subsequent, well-intended efforts to im
recognition have fostered the emergence of a seemingly simple solution to the complex problem
is commonly referred to as the "No-No-Go protocol." Those suggesting its use assert that two s
enable rapid OHCA recognition by eliminating any chance of misinterpreting agonal respiratio
breathing, which has been shown to delay OHCA recognition. The proposed solution is entic
patient is conscious and if the patient is breathing normally. If the answer to both questions

This proposed practice was loosely advocated in the 2015 *AHA Guidelines Update for Ca*
Resuscitation and Emergency Cardiovascular Care with a Class IIa (reasonable/can be
recommendation that states: "If the patient is unconscious with abnormal or absent bre
the emergency dispatcher to assume that the patient is in cardiac arrest." The recomm
document published in *Circulation* entitled: *Telecommunicator Cardiop*
From the American Heart Association, which was endorsed by the
Officials International (APCO). It should be noted that the authors
use the proposed 2-question algorithm and who have a li
™ (MPDS®). Additionally, the agency that endor
the MPDS. The Academy was asked to end

Source: International Academies of Emergency Dispatch
https://www.emergencydispatch.org/in-the-news/official-statements/10a5dbec-6401-463f-955a-a94b6ccf3131

Links to Resources

- **911 / PSAPS**
  - www.911.gov
    - https://www.911.gov/projects/cpr-lifelinks/
  - www.nena.org
  - www.apcointl.org

- **EMD**
  - www.apcointl.org
  - http://www.emergencydispatch.org
  - www.powerphone.com/

Additional Links

- FirstNet
  - www.firstnet.gov
  - www.firstnet.com
- Selected (Free) Applications for EMS Medical Directors
  - First Responder Support Tools (FiRST) Application (DHS)
    - https://www.dhs.gov/sites/default/files/publications/FIRST-Application-Fact-Sheet-Transitioned-SLUpdate-160526-508.pdf
  - Full Code Pro (AHA)
    - https://cpr.heart.org/en/cpr-courses-and-kits/healthcare-professional/full-code-pro
  - Pulse Point
    - https://www.pulsepoint.org/implementation/
  - What3Words
    - https://what3words.com/clip.apples.leap